



UNIVERSITAT
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The step between narrative and art: materializing a story into a visible product

Creating a story from scratch and turning it into a
coherent art style

Final degree work

Bachelor's degree in Video Game Design and Development

Universitat Jaume I

July 1, 2021

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To my parents, my brother, my grandparents, Ani and Marcos. Thank you for being my beacon in these gloomy years and supporting me throughout this project.

Acknowledgments

First of all, I would like to thank my Final Degree Supervisor José Vicente Martí Avilés for being so caring and helpful with all my doubts and this project.

I also want to thank some of my friends for helping me to move forward with this project. Carlos Royuela Torres for teaching me the basics of Unreal Engine 4, being there whenever I didn't know how to do something with the game engine and his critiques as my test reader. Marcos Álvarez Lázaro for his help with Substance Designer and Painter and reading my documents checking for errors.

Thank you to all of them for helping me bring Seirei into life.

Abstract

This document presents the creation and development of a complex world and the narrative that goes along with it, and how it is translated to a stylized visual product which is the art for a RPG game. The document will cover from the early idea, the construction of the world, the development of the narrative, character design, concept art, passing through 3D modeling, VFX, textures and assembling it all together in a little demo/showcase using Unreal Engine 4. Other software that have been used in this project: Blender 2.92, Procreate, Substance Painter and Designer, etc.

Key words

Worldbuilding, Narrative, Art, RPG, Stylized Art, Videogame, Illustration.

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Introduction

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This chapter is an explanation of what was the main motivation for the development of this project, what are the main objectives, at what stage it was started and to which subjects of the course it is related.

1.1 Work motivation

Since I was little, one of my favourite videogame’s genre was RPGs. Not especially because of the mechanics or the gameplay, but because of its ability to transport the player to the world and making them believe they were part of the story. Usually these games have a pretty well made and catching narrative and a quite complex world where everything that involves the story makes sense. One of the best examples is *Zelda: Breath of the Wild*, a well made story that has the player on edge till the last moment and an astonishing world that just gives so much more value to the narrative. I have always been curious about how hard it is to develop a world from scratch and what comes first, the world and then the story developing there or the stories that shape their reality.

This idea took another layer of complexity after the release of the game *Genshin Impact*, a chinese ARPG settled in the world of Teyvat, where some of their people can use elements to fight. The game made me realize a step that I had never considered before: how a world and a story materialises into a visual product? What are the artistic decisions to take into account when you want to go from paper to a coherent style that can make the player believe that the world is real and the story is really happening?.

These questions were the ones that inspired me to try to go that path and develop a magic world and a narrative happening within that world, and later, make its corresponding art and see what is the process of building everything that goes behind a finished game.

As a more art oriented person, this was a great challenge to face. Creating a world is a big task itself, but giving it a story, translating it into illustrations and concept art and then creating a small scene as a demo is definitely a big and difficult challenge, but it is one worth it. I believe it is a great way of showcasing my abilities and getting better at some areas like environment illustration, character design, and texturing 3D models.

Another thing that I had looked forward to was making a little demo/showcase of the 3D models made for this project. When I first thought about this idea for my final degree project, I didn't plan on using a game engine, I wanted to show renders of the art and just make an art book, but after some thinking, I came to the conclusion that this was a great opportunity to learn about Unreal Engine 4 and develop a little demo of one of the towns of the world and show everything like it would be in a finished game.

Overall, this project is the best place to learn more about worldbuilding, narrative and videogame oriented art. Also, the possibility of improving my skills is something that I am quite happy with.

1.2 Objectives

- To create a world with its different regions, people, races, vegetation, political systems and everything that is relevant to a future story.
- To create a narrative that develops within that world.
- The creation of concept art, illustration and character design from the world and narrative design documents.
- To create a series of stylized game assets that can translate the overall feeling of the narrative and world.
- To create a 3D model of the main character and hand paint it in Substance Painter.
- To create a demo/showcase to display all the 3D models and some VFX and to create a little scene that could be in the final game.
- The compilation of all the work done in 3 documents: a worldbuilding document, a Narrative/GDD and an artbook.

1.3 Environment and initial state

This project was started without a clear idea of what story I wanted to tell, how I wanted everything to look and with little to zero knowledge about worldbuilding. Furthermore, I didn't know how to use Substance Painter, Designer and Unreal Engine 4.

The first two weeks I had to investigate and document myself about everything that I wanted to cover in this project and set a clear direction. This was an ambitious project, but overall I think it went pretty well.

1.4 Related subjects

- VJ1216-3D design
- VJ1223-Video Game art
- VJ1227-Game engines
- VJ1218-Hypermedia narrative and video game analysis
- VJ1226-Character design and animation



Planning

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This chapter shows how the project was planned for the correct development of the project, which parts had to be followed, the tools used, the cost of the resources and the expected results.

2.1 Tasks and subtasks

- Development of the game's narrative: 95 hours
 - Worldbuilding
 - Characters personality and background
 - Creating the belief system the world has
 - Creating political and social conflicts
 - Creating the main story
 - Creating side quest and stories
 - Creating the mechanics the game will have
- Recopilation of all the narrative work into a GDD or game bible: 1 hour
- Concept art: 70 hours
 - Building style and reference sheet
 - Character style and reference sheet
 - Illustrations of the key moments
 - Blueprints for the character modeling

- 3D modeling and texture: 80 hours
 - Selection of the assets
 - Character model and texture
 - Modular buildings model and texture
 - Creating smart materials for the environment
 - Creation of the remaining props and assets

- Creation of an artbook: 1 hour

- Demo: 35 hours
 - Creating the landscape and the town
 - Programming of some mechanics and movement (or using blueprints if it's UE4)
 - Post-processing

- Write the final memory (13 hours)

- Work on the presentation (5 hours)

2.2 Timeline

In this section you will find all the tasks listed above visually organised in a Gantt chart (see figure 2.1)

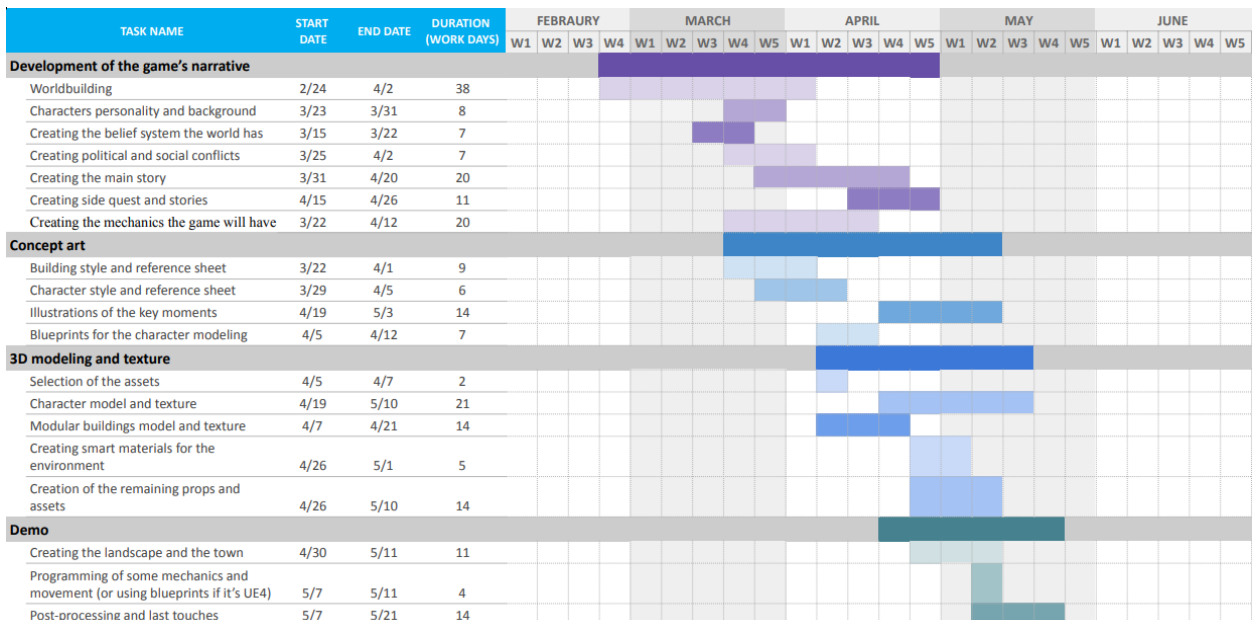


Figure 2.1: Initial planning (Gantt Chart)

2.3 Tools

- **Google student suite:** the Google suite provided by the Universitat Jaume I to all students will be used for the work of creating the narrative, using Google Documents and Google Spreadsheets together to keep track of the world-building and the story. In addition, Spreadsheets will also be used to organise everything needed for the demo and to keep track of what is done and what is not.
- **Procreate:** is a drawing and design software available for tablets with IOS operating system. Its license costs € 10.99. The 2D art and design part will be developed using this tool. This consists of:
 - **Concept art:** Based on the narrative, artwork will be created that will set the artistic style and references to the environment and setting of the project, including relevant scenes from the narrative, sketches and illustrations of the city and the characters. Both the initial design phase and the final artwork will lay the groundwork for the game art and the modelling and creation of the environment.
 - **Character design reference sheet:** Sheets with the detailed description of the characters and illustrations that demonstrate it. This includes physical features, clothing, color palette, skills, and other considerations.
 - **Buildings reference sheet:** references of the game architecture, buildings and their stylistic considerations, colour palettes and materials guide to facilitate the process of creating them.
 - **Character blueprints:** template that will be used to correctly model the main character.
 - **2D elements for the demo:** the elements necessary to use in the game demo, such as interface elements, if they are implemented for the menus and any 2D elements in game, such as images and posters.
 - **Texture work:** some texture will have to be hand drawn to create materials inside UE4.
- **Blender:** is a 3D modeling and sculpture software available for any operating system, free and open source. This tool will be used to:
 - **Characters:** 3D modeling of the different characters required for the demo, as well as their animations (this is optional if the project is running on time).
 - **Buildings:** a set of modules will be created in order to be able to assemble different buildings without problems, so that the buildings will maintain a coherence in style and a certain similarity.

- **Props:** 3D modeling of all the props that the demo will require, such as weapons, decoration objects for the scenarios, etc.
- **Vegetation:** plants, trees and all kinds of assets needed to create the demo landscapes.
- **Substance painter and designer:** is a 3D texturing and smart materials creation software. It uses both a manual painting viewport and nodes to create materials. It is not free but has a license for students, which is the one that will be used. This program will be used to perform the following actions:
 - Painting of the assets and different elements of the game.
 - Painting of the characters.
 - Creation of materials to be used later in blender for the scenarios and others
- **Canva:** is a free graphic design website that allows you to create documents of any kind with a professional result. This tool will be used to:
 - GDD layout and the game bible.
 - Art book layout
- **Unreal Engine 4:** the game engine chosen for the project was Unreal instead of Unity. This is because Unreal offers more tools for developing stylised environments, and its particle system and material creation tools could achieve the desired look and feel for the project: creating a good atmosphere using the art created for the game in combination with the engine's tools, such as post processing and the terrain and foliage tools.

2.4 Resource evaluation

The entire final project has been developed by a single person, using a computer and internet access. The hardware used and its specifications are described below, as well as its total cost.

1. Computer: Alienware 15 R3 Laptop
 - a. CPU: Intel(R) Core(TM) i5-7300HQ CPU 2.50 GHz.
 - b. Graphic card: NVIDIA GeForce GTX 1060.
 - c. Crucial BX500 480GB 3D NAND SATA 2.5-inch SSD.
 - d. RAM: 8,00 GB.
2. Keyboard: Newskill mechanical keyboard Serike with blue switches.
3. Mouse: Logitech g203 prodigy.

4. Graphic tablet: Huion 1060 plus graphics tablet.
5. iPad Air 2019 with first generation Apple Pen.

The total cost of the hardware used is 2.422,63 euros taking into account the price at which many of the now withdrawn components, such as the computer, mouse, iPad and graphics tablet, were sold. As for the software used, the total cost without the student licences would be 130.99 euros, but by using the student licences, the total cost incurred by the student was 10.99 euros.

Regarding the cost of labour, according to the provisional extension of the Royal Decree of 4 February 2020 regarding the minimum interprofessional wage[10], the minimum wage for this project would have been 1,187.25 euros.

The professions involved in the development of this project would be the following:

- Storyteller
- Game designer
- Concept artist
- Character designer
- 3D artist
- Texturing artist
- Technical artist

2.5 Expected results

The expectations for this project are to develop a coherent and believable world, with a story that fits perfectly and to transform all that work into art, obtaining illustrations, concept art and a small demo of one of the cities. Furthermore, the final products of this project are expected to be:

- A worldbuilding document, a sort of a guide of the world, its different regions, how everything works, how magic works, what weapons are used, etc.
- A GDD with all the narrative and mechanic aspects of the game
- An artbook with all the art done for the game
- A small demo that showcase all the work done



Worldbuilding

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This chapter deals with the process of developing the story world, what factors had to be taken into account and how they affect the rest of the world and the main narrative.

3.1 First approach

When I first started thinking about this project I had an idea for a story about a warrior trapped in time just to wake up when the evil she tried to defeat awakes again. I started to develop this idea little by little, but I felt some things were off. I presented my story to a few friends to get an external point of view, and I discovered what was happening: the idea was very dull. I tried to build up a story, a narrative, from scratch, but when I didn't know how to justify some things I ended up using cliches. This first contact with the project solved one of the questions I've always asked myself: the world comes before the narrative, at least in my experience.

With this knowledge in mind I came to the conclusion that I had to start developing the world in order to be able to build up the story. With that in mind, I started to look for some advice or a guide to know how to build a fantasy world. In my research I came across the "Reedsy Worldbuilding Template for writers" which I used as a guide of what elements I should include. I didn't strictly follow it, but it helped me understand how this process works.

3.2 Magic system and how it affects the world

The focal point of this world is its magic system, which is not exactly a magic system at all. The aim was to create an element that could be the focal point of how the world works and affect everything, but at the same time, it could be only used or seen by a few, so it creates a conflict between its inhabitants.

“In Seirei an elemental energy flows in its purest state, but this energy has the ability to transform itself according to the mood of the living beings of the place. Only very strong emotions can generate a spirit. It can be converted into two types of energy, giving rise to "spirits" of elemental energy. Two types can be distinguished:

- *Positive energy: those spirits that are created from good and pure emotions, innocence and affection. They are totally harmless to the inhabitants of Seirei, acting as protectors of towns, cities ... Depending on the strength of the emotion that engenders it, they can last a few hours or even millennia. Normally, each settlement is built around a spirit, which has the ability to merge with any tangible element. For example, in Guardian's Lair, the statue around which the town is built houses a benevolent spirit for centuries, which protects the town from evil spirits.*
- *Negative energy: unlike the positive, this is the most common, since it is born from the most frequent emotions that living beings produce: fear, anxiety, hatred, sadness, suffering, etc. Any being can unknowingly engender spirits, from animals to people. When there is a very strong negative emotion, a spirit without consciousness is usually generated, which is nothing more than an accumulation of energy. Although, greater loads of emotions can give rise to spirits with consciousness, such as a murder can give rise to fear, anxiety and other emotions that the person about to die is manifesting, giving rise to a personification of him in spirit that, even if he is a rational being, he is only moved by the thirst for revenge.” [12]*

When the magic system was clear, a race that was the only one that can fight evil spirits was introduced.

“Although elemental energy flows throughout the world and there are spirits in every corner, only a specific race of beings can manipulate it at will. These beings are (insert race name). They can see spirits and even manipulate the energy around them to fight them. Still, the ability to see them is not unique to this race. From time to time humans are born who are able to see them too. Those who can see spirits are said to possess The Gaze, an extremely rare quality in other humans on Seirei.” [12]

Everything in the continent of Seirei revolves around elemental energy, as they live in a constant plague of evil spirits. It's technology is created to protect themselves from the negative energy and fight the spirits. Its religion is based on people who fought these forces, myths of the creation of the world and energy, and prophecies that announce the rise of a legendary warrior that will vanish all the evil from the land.

Making the magic system the focal point allowed to create the world around it, so everything is affected by it, but only a few affects it. This gave the world a coherent feeling from region to region, and the narrative a set of rules that shaped what the characters can and can't do in the world, and how their actions and experiences affect them.

3.3 People

There are six races in Seirei, usually indigenous to each region.

- This race has tanned skin, a strong build and an average height of 1'60 metres. Their facial features are usually quite pronounced, with predominantly greek noses, almond-shaped brown eyes and rather round faces. In addition, brown or black hair is common, including body hair. They originate from the southwestern region.
- This race also originates from the southwest region. They are dark skinned, with mostly flat noses, almost black eyes and very curly, black hair. Their average height is about 1'85 m, and they have a very strong build.
- This race comes from the north-eastern region of Seirei. They are of a very tall average height, 1'95 m, and of a rather slender build. Their eyes are slanted, with a predominance of green and amber. They also have high cheekbones, sharp faces and flat or upturned noses.
- Originally from the central region, they are extremely tall and sturdy people, living in one of the toughest places in Seirei. They have a very whitish complexion, with very light, small eyes, aquiline noses and normally straight, blonde hair. They have very hard features.
- They are of average height and fairly normal build, and have a pale, pinkish complexion. Their eyes are large and rounded, usually blue or green. They have small, upturned noses, in contrast to very pronounced cheekbones and very delicate faces. Their hair colours can vary from red to black. They originate from the northwest region.
- This race derives from race 5, they were a small part of the population that could see spirits, and when a war broke out in the northwest region, they were searched and captured. They were forced to migrate to the southeast region, where they ended up isolated in a rather inhospitable area due to the existence of one of the largest sources of elemental energy in all of Seirei. After several centuries of living there, the population gradually mutated due to the radiation, creating a new race. Their main and most visible characteristic is the huge spots on their skin as a result of the mutation. In addition, due to this, they are the only beings capable of controlling elemental energy as they wish, both positive and negative, in all of Seirei.

3.4 Geography

For the geography of the world, differences had to be created within the different zones, using warmer climates for the southern zones and colder climates for the northern zones. In addition, each region had to have its own characteristics in order to justify the natural resources available to them, how they trade with other regions, what kind of economy the region supports, and to determine the general character of the society. Also, as explained above, the only fantasy element is elemental energy (even if it later affects other things, like the hunters for example), so the rest had to be fairly consistent with reality to generate that contrast.

Each region is based on different locations in the real world. For example the southwest region is very much influenced by Mediterranean geography and culture, while the southeast region would be a mix of France and Germany, with greener areas and in general a more lively landscape. The other two regions to the north are based on colder, more arid climates such as northern Canada and northern China. And finally, the central region, being a mountainous and arid region, is based on different mountain ranges and geographical locations.

“The continent of Seirei is divided into five regions, each one independent politically. Each region has a different weather, fauna and flora, as well as culture and traditions.

- ***Southeast Region:*** *it is a warm and wooded region, crossed by a river that rises from a lake to the northeast, and reaches the sea (located to the west of the region). Also, to the southeast there is another small lake near one of the villages. There are several forested formations throughout the region, and it is delimited on the north by mountains, a border area with the central region. Its capital is located in the northwest of the region.*
- ***Southwest Region:*** *is a coastal region located around an estuary. In this formation there are several islands, including a very large one that houses a mountain, a citadel and half of the capital. This region has a great commercial force due to its geographical location*
- ***Northwest Region:*** *This region is a place with a very difficult and hostile climate. It is crossed by two rivers that originate in a plateau. There are forests of trees accustomed to cold climates and very diverse vegetation, but very little useful in terms of resource exploitation. The region lives mainly from the forges located in the mountains surrounding the capital. It was the region where the hunt for people with unusual skills began for fear that they might dethrone the royal family.*
- ***Northeast Region:*** *the kingdom of rivers. This region is crossed by two large rivers that flow into three points, dividing the region into islands and sustaining its economy on the exploitation of natural resources, such as freshwater fishing and handicrafts from raw materials, and trade through its rivers and its large port to the north.*
- ***Central region / mountainous region:*** *The most depopulated region in all of Seirei, only a few hundred people live in the entire area. Despite its few inhabitants, they possess great economic power, since the mountains that border the region contain the best minerals, used for the creation of all kinds of objects and machines. The exploitation of the mines and their craftsmanship are the main economic engines of the inhabitants. ” [12]*

3.5 Economy and politics

As explained above, each Seirei region has its own economic activities and is dependent on each other for resources. This is to create a balanced world in which if something happens, it affects the other regions to a greater or lesser extent, thus justifying the lack of major conflict between regions and the existence of various peace and trade treaties between regions. In addition, this makes it easy to introduce some element that can unbalance the Seirei state and justify it correctly.

The political system in each region also varies. The northwestern region operates with an authoritarian monarchy; the same family has ruled the territory for centuries, controlling every aspect of life. This system creates a more oppressed and generally unhappier society, making it the harshest region for everyday life. They are also very religious, at some points leading to fanaticism.

The northeastern region also has a monarchy, but it is more flexible, as it is regulated by a council of wise ones, made up of the most illustrious people in the region. This council approves laws, regulates life and limits the actions of the queen, who is more a figure of tradition and unity than of power.

The northwest region operates by appointing a coordinator who oversees and manages the region's most important issues, while the local ones fall under the responsibility of the coordinator of the corresponding urban core. There are different positions within the administration, and in addition, there is the council of the guilds, which is responsible for bringing together representatives of each guild, discussing the economic situation and approving proposals that the coordinator must then evaluate. The coordinator will hold the post for eight years, after which the other bodies will propose new candidates. If the coordinator commits malpractice, he or she can be dismissed or even expelled from the post.

The central region does not have a centralised political system as there are so few inhabitants that it is not really necessary. They are organised by cities, each city has its own mayor and he or she is the one who legislates for that area. Mayors are elected every five years, and they must all meet periodically to maintain cohesion in the management of the different cities and mines.

Finally, the region where the story begins, the north-eastern region, is led by an order of knights, who ensure the security and stability of the region under the orders of the order's captain. The knights have an internal hierarchy, and the captain is the captain until he retires or is dismissed. He is the high commander and has the say in all matters pertaining to the region.



Narrative

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This chapter shows the process followed in creating the narrative of the game, the difficulties and considerations for its correct development.

4.1 First thoughts

This part started with no clear direction beyond the developed world and the fact that the protagonist should be a huntress to offer better gameplay. When thinking about where to develop the story, research had to be done on archetypes in storytelling and what structures worked for games.

4.2 Developing the narrative

For the narrative the archetype of the hero's journey works very well in many RPG games, such as Zelda, Genshin Impact, Dragon Quest, etc., and sets a direction for the story and events, as it follows a fairly fixed structure. But, at the same time, the archetype of the beneficent intruder was another very interesting one to explore in the narrative, so rather than creating a heroine destined to be the saviour of the world, it might be more interesting if she simply stumbled upon the problem by chance and got so involved that she was drawn into the conflict.

Once it was clear that the protagonist ends up a bit unluckily dragged into the problem, it was necessary to define who or what created that problem. An interesting idea to discuss was the role of the different governments in the use of elemental energy. Normal humans can neither see it nor use it,

but they can create artefacts that do. The general view of the Seirei people is that these advances are to protect themselves from the spirits and ultimately to eliminate them. But, a more realistic approach was to raise the question of whether any region would not try to control negative energy, and with it the spirits, in order to use it as a weapon.

This opened up some interesting possibilities, such as the existence of secret projects in the eyes of the population to create some kind of weapon. Also, if you look at the dependence of the regions on each other, it makes even more sense that some, if not all, would try to create a weapon that could tip the balance in their favour and subdue the others.

While this reasoning provides a basis for creating a conflict, a clear antagonist had not yet been defined. Considering the political and economic systems of the regions, the easy antagonist was the monarchy of the northwest region, but this was quickly ruled out since they were the ones who forced the people of the now hunters to leave. After analysing which of the regions could be the most powerful to generate a conflict, and which also had to have a stable system, the northwest and southeast regions were chosen as candidates. Since the protagonist would be a huntress in a local area, not being the most skilled, the region where the hunters live was also ruled out. So it left the monarchy and the council of sages in the northwest region as the cause of the conflict.

With all these decisions made, and the path dictated by the hero's journey, work could begin on the story.

4.3 Story

This section provides a brief summary of the story developed for the project.

“At the end of a reconnaissance mission, Rilka goes to the temple to honour all fallen hunters, as tradition dictates. As she walks back to the Hunter Citadel, a magpie approaches her with a message. Strange stains have appeared on the statue of Guardian's Lair and its protection seems to be steadily diminishing. She must go and investigate the statue until a more experienced hunter arrives.

When Rilka arrives, the spirits begin to enter the village. After fighting them off, she investigates the statue, finding a strange contraption in a crevice. It gives off a large amount of negative energy, and this was weakening the statue's own energy, weakening the shield it forms around it. As the small piece of machinery is removed, the stains begin to disappear, bringing the village back into balance.

As she sets off for the Citadel to take the strange object and report what has happened, a group of people and a spirit assault her on the way, taking the object and her weapon with them, and leaving her unconscious on the ground.

Rilka wakes up in the Citadel, and after recovering, reports what has happened. Of her own accord, she sets out on a journey to investigate where the object came from, why someone would want to weaken the power sources and ultimately retrieve her weapon.

After going through all the regions and fixing problems arising from similar objects and the people behind them, she discovers that the queen of the northeast region has formed a small commission to develop technology that will allow her to control the negative energy and use it as a weapon against other regions. Moreover, within this commission is a mutant being, charged with negative elemental energy and capable of controlling it at will, as the hunters do with positive energy. Thanks to this person they can create mechanisms that counteract both the positive energy transmission systems and the hunters themselves.

Rilka tries to warn the knightly order of her homeland, but they don't take her seriously, so she decides to go to the river kingdom herself and put an end to the dark being.

After much trouble and struggle she manages to reach him and defeat him, but not before she is seriously wounded in one arm. The scandal of the commission and the queen's betrayal quickly spreads through Seirei. Over the next few months the hunters scour the continent in search of artefacts or more beings capable of controlling negative energy."

4.4 Main character

The protagonist and playable character is Rilka. She is 21 years old, and has spent her entire adolescence training to be a hunter by order of her grandfather, her only living relative. Rilka comes from a family of hunters with quite a reputation and status within the citadel, even though she is quite average. She is of average height and athletic build.

Rilka usually does research and reconnaissance tasks, as she is quick and agile, so the hunters assembly assigns her missions according to her abilities. From her grandfather she inherited the hunter's tunic and her weapon, one of the first *vargiadas* ever created. Her clothing beyond that is rather simple and even of a person of no means, as she has always worn clothes given to her by other hunters.

She is an absent-minded person, so she always keeps a diary where she writes down everything she needs to work on, such as the current mission, a map of Seirei with every important place noted and a record of the items she carries (this later becomes the game's pause menu).



Game concept

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This chapter shows what is the concept of the game designed from the story, what are its key parts, the genre it belongs to, the audience and platform.

5.1 Synopsis

Spirit Fall is an open world, ARPG for PC where the player controls Rilka, a huntress of spirits that gets involved in a strange case. Throughout the game, the player will travel through Rilka across the entire continent of Seirei, exploring every nook and cranny, fighting spirits and other enemies and trying to solve the riddle started in Guardian's Lair.

5.2 Game concept

The idea for this game has been fully developed by Yaiza Herrero Rodríguez, from world building, game design, narrative, concept art and finally all the concept art. Also, a small demo that does not pretend to be the game, but to show all the assets created in a game environment, as well as adding visual effects, lighting and post-processing.

This game takes place on the continent of Seirei, a world where two types of energy co-exist. One day, Rilka, a huntress of spirits receives an assignment from the hunters explaining that she has to

investigate what has happened to the Guardian's Lair statue and whether it was the work of a spirit. What was supposed to be an unimportant assignment ends up dragging her into a dark story that has been unfolding since the beginning of her race.

The player has to travel around Seirei fighting enemies and solving mysteries that often involve puzzles. In his or her journey, the player will discover Seirei as well as its dark secret and how Rilka got accidentally involved in it.

Spirit Fall uses a stylised and cartoonish visual style, creating a fantasy surreal ambience that's not too unrealistic for the player.

5.3 Key features

This game has some key features that contribute to the overall gaming experience.

- **Seirei:** the game world, where all the action happens and where the player will be able to explore each city and learn more about Rilka and this place.
- **Rilka's diary:** this diary functions as a menu, where the player can select the different diary entries, i.e. the map, the mission list, inventory, past events and collectibles.
- **Weapon charge system:** One of the most characteristic mechanics of this game is the need to imbue weapons with positive elemental energy in order to fight against spirits.
- **Camera:** a third-person camera that follows the players and can rotate around the character.
- **Graphics:** will allow the player to explore a magical world thanks to its stylized, almost painterly art, making them feel like they are inside an animated movie.

5.4 Genre

Spirit Fall is an Action Role-Playing game (ARPG), where the action, the combat system and the rewards have a defined importance, but it can also be compared to an Action-Adventure game due to its very deep focalization in combat and problem solving.

It can be compared to The Legend of Zelda: Breath of the Wild and Genshin Impact (which were the main inspiration of this project).

5.5 Look and feel / game experience

The player must be able to empathise with the main character and live the story through her eyes, feeling like he or she is the protagonist and thus becoming more involved in the story. Furthermore, the possibility of exploring, interacting and fighting will make the player more immersed in the world.

5.6 Target audience

Aimed at a big variety of players, from young to adult, but mainly RPG, adventure and action fans due its characteristics. It could be suitable for casual players who enjoys a good story, or more hardcore players that need a progression system.

Its target age is between sixteen and thirty, but it's suitable for younger players (over twelve years). Its PEGI rating would be PEGI 12, violence (cartoon violence, which isn't too explicit and suitable for pre teenagers) and bad language.

5.7 Platform

The main platform is PC, but if the game is a success, a cross save system would be implemented to release the game on other platforms such as PS4, Nintendo Switch, iOS and Android.



Game mechanics

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This chapter describes the mechanics and general gameplay of the designed game, as well as its controls and how the menus and dialogues would work. The mechanics mentioned in this chapter are not part of the demo.

6.1 Core gameplay

The basic gameplay in Spirit Fall is to fight enemies and explore the world. Enemies increase in level and difficulty as the player progresses through the game and gains new weapons, improves their stats and levels up. This can be achieved by fighting weaker monsters, exploring the world or doing side quests that help level up faster.

6.2 Game flow

Being an open world, the flow of the game can be branched in a number of ways. The main story is linear so that if the player chooses to focus on the story and ignores the side quests and exploration of the world, the game moves forward in a straight line. On the other hand, if the player decides to explore and encounters side quests the pace of the game is no longer linear, so that the pace of the game is really driven by the player.

6.3 Gameplay & mechanics

The player will start with a basic sword and a very low stamina and life level. At this point, only the enemies in the first few areas can be dealt with without any problems. If he tries to go to other areas, he runs the risk of being killed by higher level enemies. So he must fight the enemies in his range, and the final bosses to be able to level up and move around the world without much trouble. By defeating bosses or encountering them, the player gets better quality weapons, as well as items that can help him.

The main mechanics are running, jumping, rolling, attacking, using items and switching weapons. Each weapon has a different way of attacking, and with that a different gameplay. Other game mechanics are:

- Recharging weapons, shields and tools with elemental energy. Throughout the map there are elementary power stations where the player can recharge their weapons as they lose the power imbued in them. If they lose their energy completely, they will not be able to finish off the enemies.
- Enemy and energy scanner. The player will be able to obtain an item that will allow him to see his surroundings in greyscale, except for enemies, which give off a maroon aura, and power sources, which emit a blue aura.
- Talk to NPCs. The player will be able to engage in conversations with the inhabitants of Seirei and in many cases choose the answer.

6.4 Movement and controls

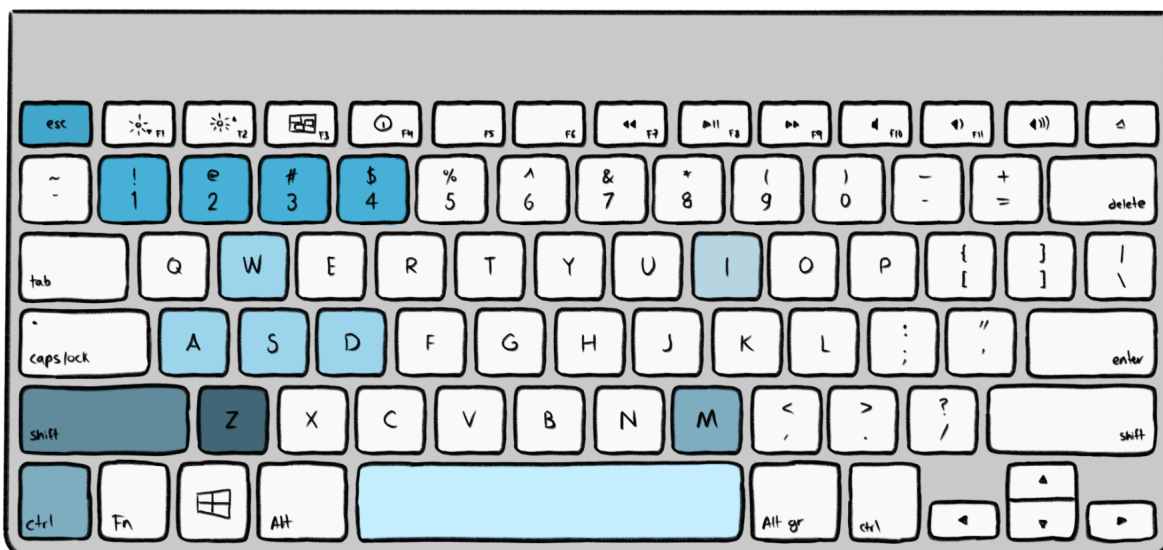


Figure 6.1: Player controls diagram

- **W, A, S, D:** move.

- **1, 2, 3, 4:** change weapons.
- **Shift:** run.
- **Control:** dodge.
- **Space bar:** jump.
- **Z:** use object.
- **I:** inventory.
- **M:** map.
- **Esc:** pause menu.
- **Mouse:** camera.
- **Left mouse button:** attack.
- **Hold the left mouse button:** charge (only bows).
- **Q, E:** abilities.

CHAPTER



Concept art

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This chapter explains the process of creating concept art, the references used and how each of the elements should look like.

7.1 World ambientation

After the first phases of worldbuilding were completed, it was time to start developing the art style. The idea of how to translate what was written into something visual was very clear from the beginning. The main source of inspiration was the *Studio Ghibli* films, and how they approached environments and the creation of fantastic places full of life (see figures 7.1 and 7.2).



Figure 7.1: Close up frame from Princess Mononoke (Studio Ghibli, 1997)

Figure 7.2: General frame from Princess Mononoke (Studio Ghibli, 1997)

As *Seirei* is a place where elemental energy flows constantly, a more painterly style that can give it a more mystical feel is a good fit. In order to achieve this goal, a process of research had to be done, which ended up with a conceptual artist called *Devin Elle Kurtz*, who specialises in environments. She had developed a brush pack with all her landscape brushes and had 3 hours of tutorials on how to use them, so using her brushes and tutorials was one of the best options available.

Once the workflow was acquired, several tests for the style were carried out on a blank canvas (see figure 7.3). The design was kept as simple as possible, painting grass scenery and some flowers, because vegetation plays a very important role both in *Seirei's* environment and in the lives of its inhabitants. The result was seven small illustrations showing the desired painterly style (see figure 7.4).



Figure 7.3: Close up of one of the environment tests

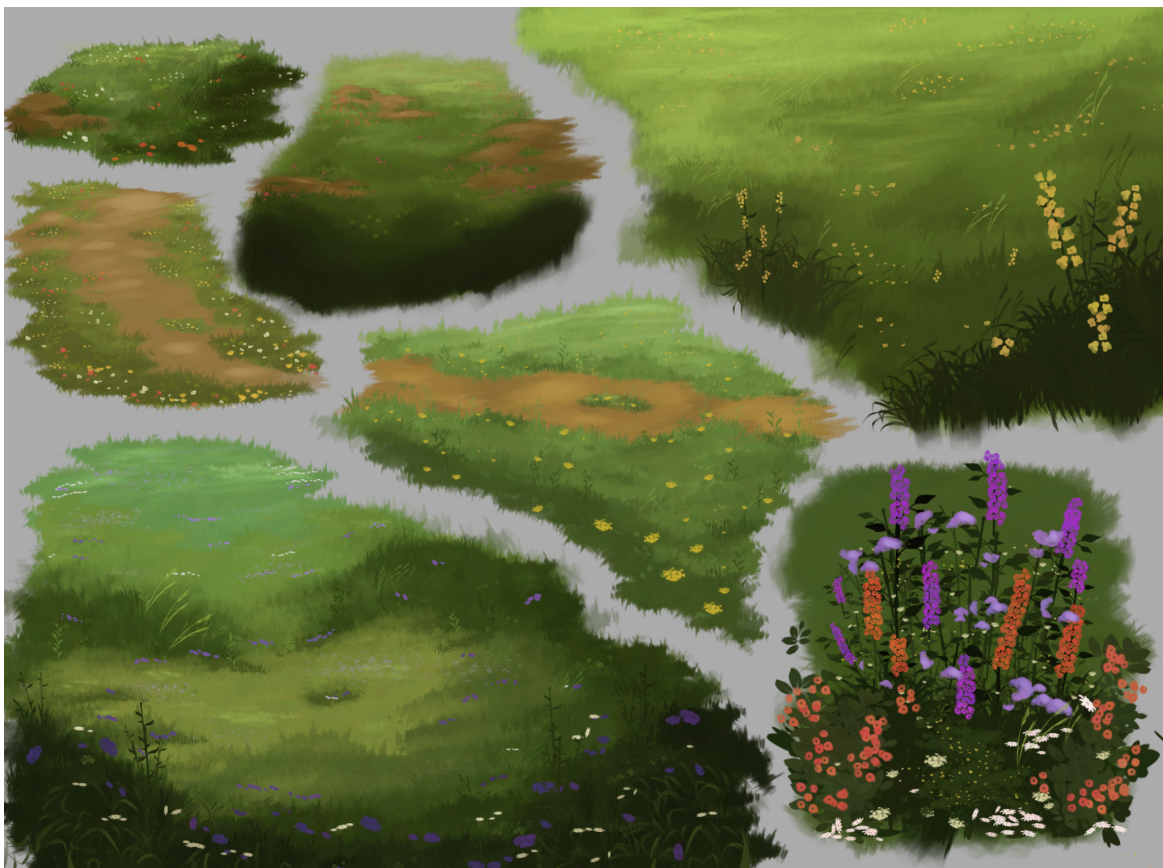


Figure 7.4: Compilation of environment design tests

The same process was followed for the trees (see figure 7.5) and other elements of the vegetation, so there was a very large variety of references for how certain things had to look in the final concept art illustrations.

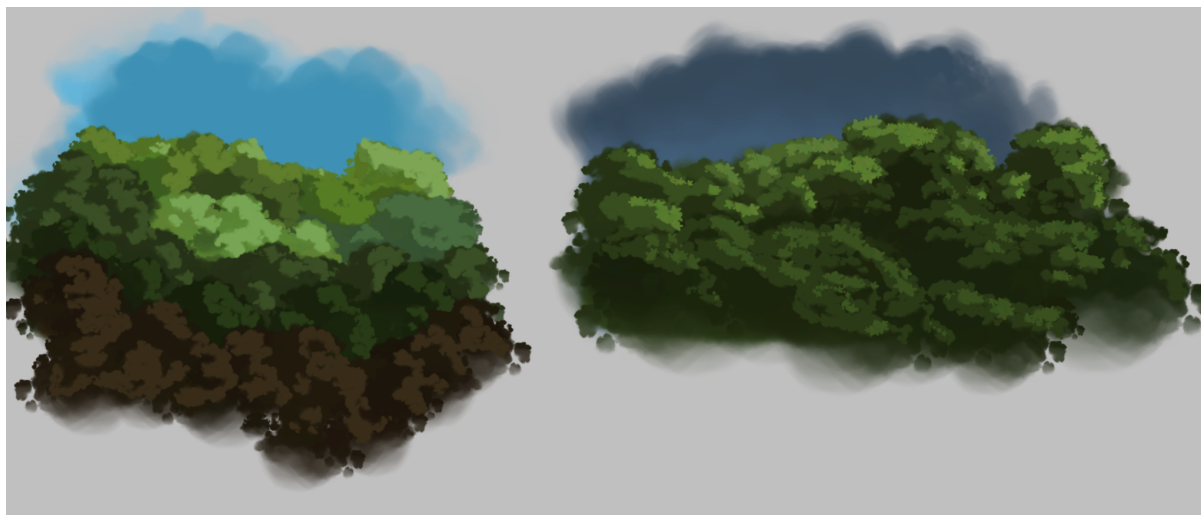


Figure 7.5: Treetop style tests

7.2 Character design

For the design of the character, several considerations had to be taken into account. The first was that it had to be an eye-catching design, so that it could stand out from the NPCs. The second was that the design had to reflect the personality of the protagonist, while at the same time giving a bit of atmosphere to her background.

The process was quite simple, as there was already a clear idea for the design. For the clothes, the idea was to create a very simple base design, which was not too ostentatious to imply that the protagonist doesn't have many resources. To this end, the torso is covered by shreds of cloth and the trousers she wears are made of a very cheap material and are clearly several sizes too big. The contrast in the clothing comes from the pieces that are clearly inherited from the hunters, such as the protections, the boots and the "kimono".

For the colour palette, the clearest choice according to the character and the rest of the colours was a palette in warm tones, so that it would stand out in the world and also give a warm feeling to the player, being able to connect more with the character.

Once the design decisions have been made, a first sketch is made to fit the base shapes and the figure of the character. Then a layer is created with a second, more detailed sketch. The next step is the lineart, where details are added and confusing lines are cleaned up. Later the flat colours are added. In

this phase of the concept, different palettes are tested until the most suitable one is found (see figure 7.6). Once the colours are decided, shadows and lights are added (see figure 7.7).



Figure 7.6: First sketch, second sketch, lineart and flat colours of Rilka



Figure 7.7: Final concept of Rilka

7.3 Weapons designs

In *Seirei* the most common weapons are bows and swords. These weapons are used against evil spirits or humans indifferently. As they are so common and everyone can obtain them, its design had to be more simple, without big ornaments.

On the other hand, daggers are usually gifted, and are more of a decorative element than a weapon, so when it came to creating his design, it had to be very ornate. In order to understand where to add the details and shapes of the blade it was necessary to look for references to daggers usually made by high society people in the past. The aim was to make them look delicate, not made for fighting, being a gift given to loved ones (see figures 7.8 and 7.9). It made more sense this way, it was more like a good faith gift than a useful one.

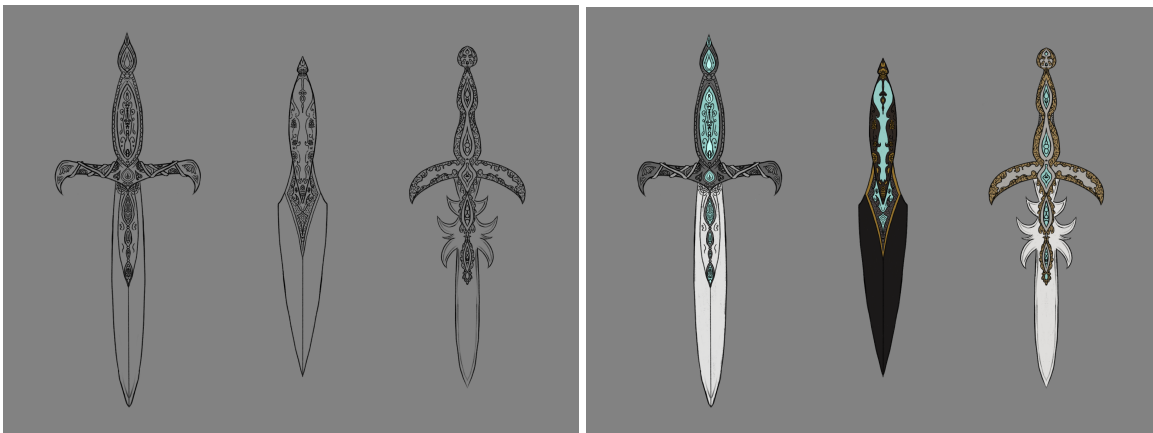


Figure 7.8: Daggers design
Figure 7.9: Coloured daggers design

In some regions of *Seirei* some groups use spears as a weapon against spirits, but they are quite rare to see. As these weapons are very rare, the most probable scenario is that only a few blacksmiths know how to create them, so the spears tend to be more decorated than bows or swords, as blacksmiths want to make them stand out more. Inside this category we can find halberds, which are even rarer. For the design of these weapons it had to be delicate but at the same time fit to fight (see figures 7.10 and 7.11).

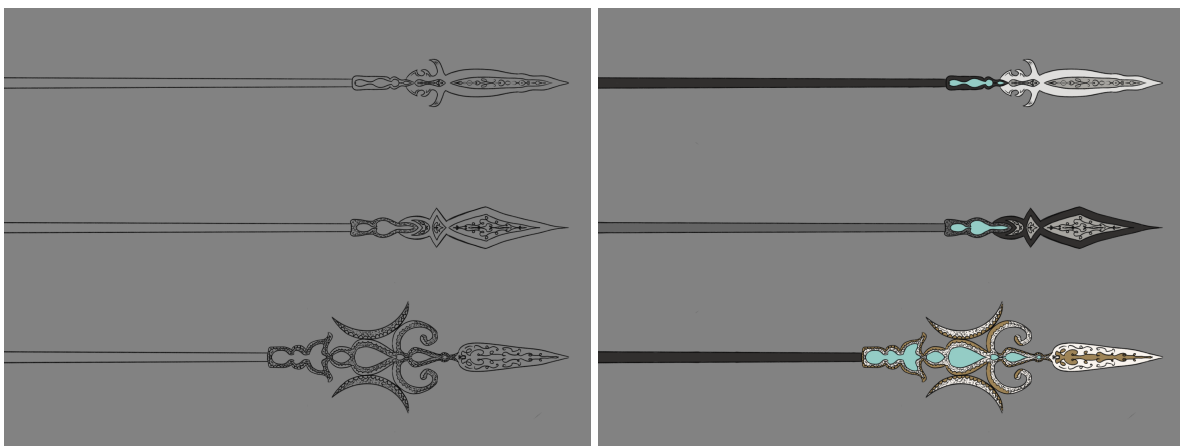


Figure 7.10: Spears design
Figure 7.11: Coloured spears design

All these weapons are the ones that normal humans use, but the hunters use a special weapon that anyone else uses: “*Vargiadas*”. They are like scimitars, but very ornate as they are special weapons passed from generation to generation. The design of these weapons was the most complex one to develop (see figures 7.12 and 7.13).



Figure 7.12: *Vargiadas* design

Figure 7.13: Coloured *vargiadas* design

7.4 Buildings design

The main region from which all concept art was developed was the south-eastern region, as this is where the story begins. For the design of the buildings in this region, the main source of inspiration was the medieval European cities, specifically those in the German area. The buildings in these towns are characterised by plaster walls, wooden beams and decorations, and in many cases a combination of rock walls. In addition, details such as roof tiles and windows offer a great deal of diversity from one building to the next (see figures 7.14 and 7.15). It was a very appropriate style for buildings in this area. Other regions have other types of architecture, for example the southwest region has buildings in a more Mediterranean style, with white, single-family houses and some touches of colour such as red and blue. But, for this project the goal was to design the initial part of the story, so the concepts were made especially for the first village that Rilka visits: Guardian's Lair.



Figure 7.14: Reference for the buildings, Germany square

Figure 7.15: Reference for the buildings, Germany street

Guardian's Lair is a town located between the Citadel of the Hunters and the capital of the region, and is an important place for travelers and merchants. The town itself is built around a big statue that contains a spirit that protects the town. With this in mind, a good idea was to place the village at different heights around the statue (see figure 7.16), connecting areas by means of stairs, and giving rise to constructions such as covered markets and vertical gardens.

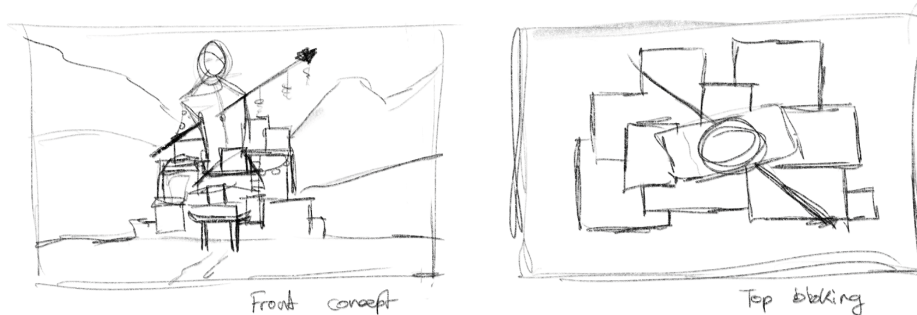


Figure 7.16: First sketches of Guardian's Lair

7.5 Key illustrations

As a final step, several illustrations and sketches were made as concept art for the game. Here are some samples (see figures 7.17, 7.18, 7.19 and 7.20).



Figure 7.17: Open field near Guardian's Lair concept art

Figure 7.18: Forest concept art



Figure 7.19: Environment concept art

Figure 7.20: Elementary power station concept art

A map was also created as concept art, so that everything described in the worldbuilding document could be seen and each place could be oriented on a *Seirei* map. For the map, it was necessary to create a mountain brush to speed up the process (see figure 7.21).

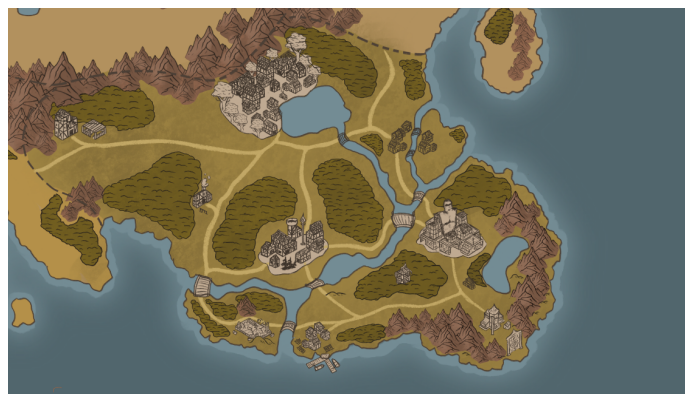


Figure 7.21: Map of the Southeast region



Game art

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This chapter shows the process of creating all the assets for the game, from vegetation to buildings, explaining the workflow followed and the problems encountered.

8.1 Vegetation 3D models

Once the concept art was done and the overall art style settled, it was time to think how to translate what was illustrated to a 3D environment. The first step was the vegetation of the game.

The objective was to achieve the same painterly whimsical look, so it was discarded a low poly or realistic artstyle. After looking at video games like *Zelda: Breath of the Wild* (see figure 8.1) and *Genshin Impact* (see figure 8.2) it was discovered that the name of this painterly not realistic artstyle was “stylized”.



Figure 8.1: Legend of Zelda: Breath of the Wild (Nintendo, 2017)



Figure 8.2: Genshin Impact (MiHoYo, 2020)

Once it was clear how everything was to look, a reading of various articles began [1][6]. One of them, by Dragos Matkovski [2], explained how he created the assets for his pack "Stylised Nature" [3]. Following the explanations in the article, the process of creating the assets began. To do this, we first had to create organic shapes, using a UV Sphere as a base. To deform the sphere, Blender's sculpting tool was used. Then an intersection of two three planes is created, and by adding a hair modifier to the spheres, their surfaces are populated with the planes. So that only the planes remain, the spheres are removed, and the positions of the planes are randomised within a defined range (see figure 8.3). After doing this, the normals are useless, so they have to be recalculated. To do this, a new sphere is used around all the planes and the normals are transferred from the sphere to the planes, so that the normals will point outwards. This method was used for all assets involving foliage.

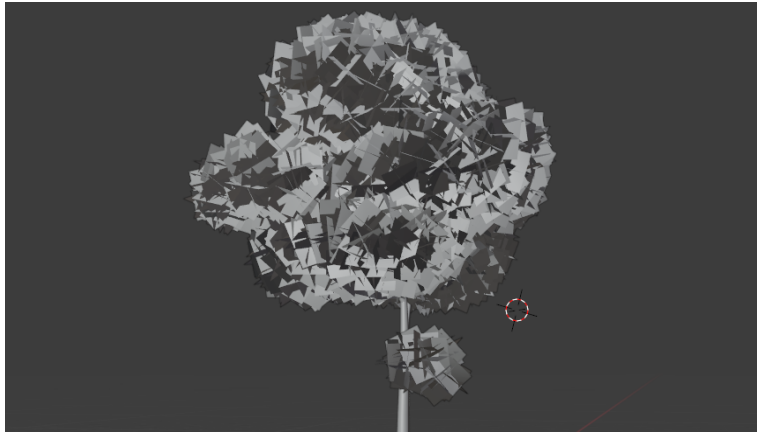


Figure 8.3: Base tree 3D model

For the material, a more abstract leaf texture was created in Procreate and then imported into UE4. A material was created and set the texture as an opacity mask, so the plane will be transparent where there isn't a leaf. Then there is a parameter for the colour, a parameter for emissive light and another for the roughness. Also, a parameter is added to create a Subsurface Color, so the tree has some variations (see figures 8.4 and 8.5).

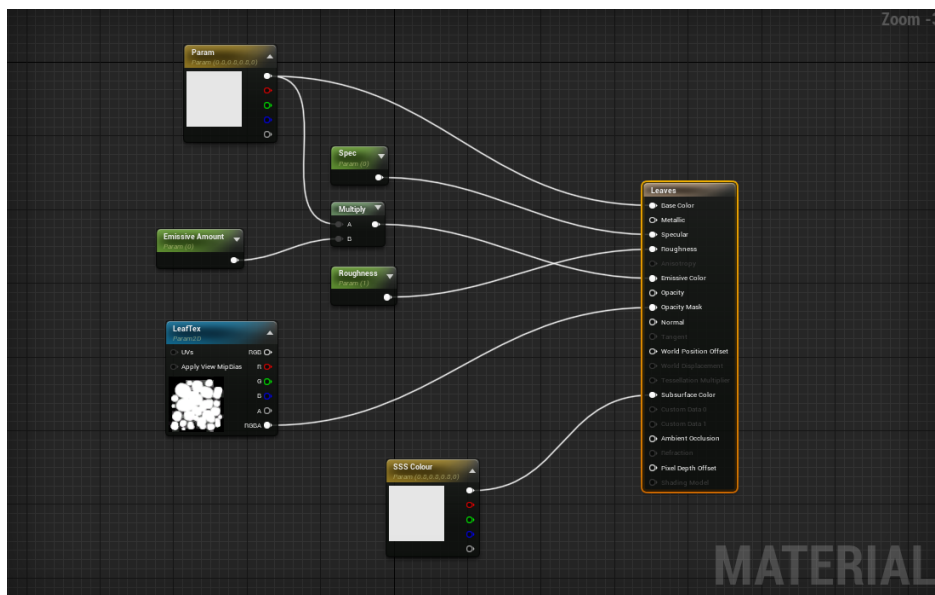


Figure 8.4: Node graph of the leaves material created in Unreal Engine 4



Figure 8.5: Final look of the tree

For the grass and flowers the process was a little bit more complicated. The first approach for the grass was to create a texture and use it inside UE4 with planes, the same method explained before. Although this method did offer that style of an animated film, when using transparencies it was not optimal (the plane is a “solid” element and using a PNG with transparencies would cause it to have to use the alpha channel later in the shader). Processing transparencies can be a very costly problem for computers. After a couple of tests, the best way to do it was to start from polygons that use less resources and build the grass strands separately.

For polygonal grass, the first thing was to create a small blade and warp it a bit. Using the array modifier, several copies are generated, and later by randomizing the origins, the organic appearance of the grass is achieved (see figure 8.6). Then a duplicate is made and the normals are turned around (see figure 8.7). As the grass consists in different deformed planes, one face of each blade would be visible, but the other would not, so by duplicating the object and turning the normal to the other side, the object will be visible on both sides.

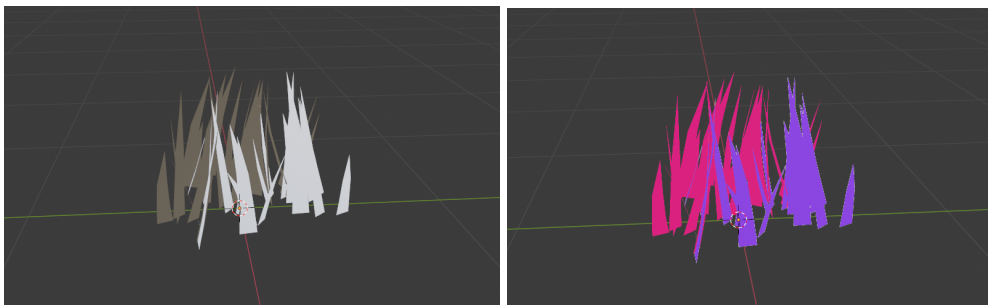


Figure 8.6: Grass blades

Figure 8.7: Normals of the grass blades

The next step before exporting to Unreal is to use vertex paint to define a system of false weights so when implementing wind to the grass the result will improve. First every vertice (the entire object)

was “painted” with the color black. Then a red color was applied in a gradient from top to bottom, leaving the lower part black. This way, the vertices affected by the red color will move with the wind, but those affected by the black color will not. The vertex paint function only works with the colors of the RGB spectrum.

Once the model is finished and prepared, the next step is to import it to Unreal 4. Once it is inside the engine, the material is configured. In the Unreal 4 material editor a parameter node is created for the color, which can then be adjusted without problem. Then to simulate the wind there is a node called SimpleGrassWind that creates the illusion of wind in the grass. Two parameters were created to control the weight of the wind and the intensity. In addition, so that the wind does not move the entire object and appears as if the entire object is moving, a Vertex Color node is used and connected with the Simple Grass Wind node through a multiply node and the result of this modification is connected to the World Position Offset of the material. What happens in this sequence is that the wind will only affect those vertices that were painted in red, so the grass root will not move (see figure 8.8).

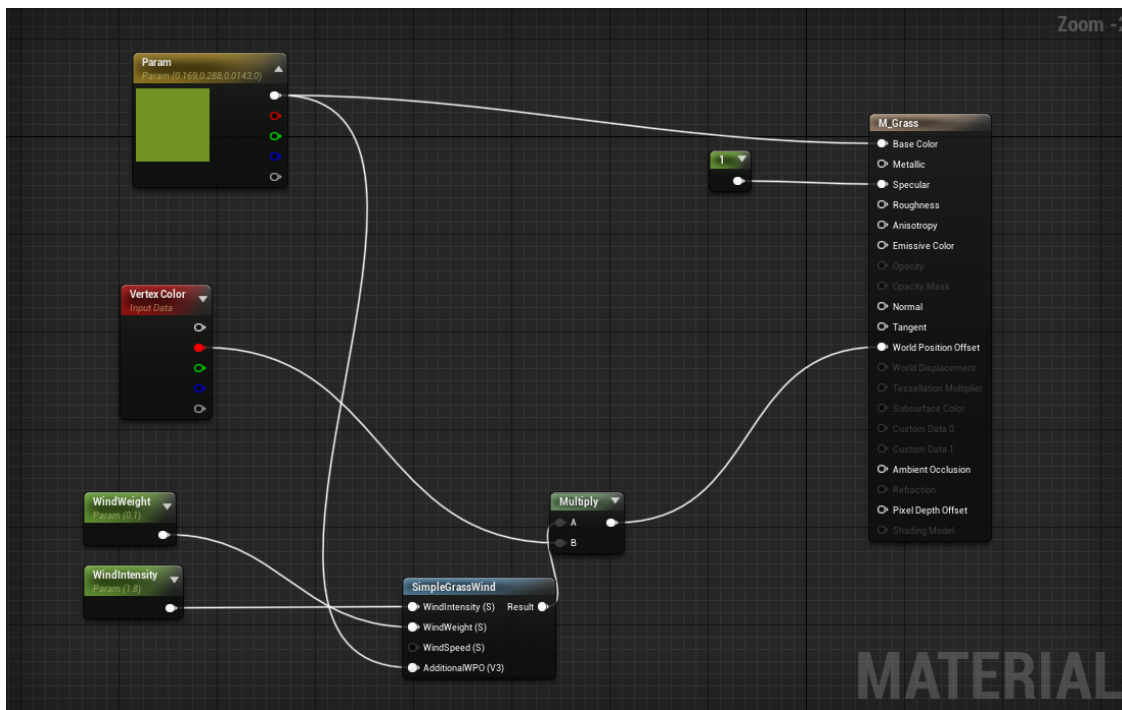


Figure 8.8: Grass material with the vertex paint and the simple wind

For all the types of flowers implemented the procedure is the same, but the shape and color of the flower changes. First a circle (plane) is created in Blender and the shape of the petals is created through the vertices. Then the vertex that is in the center moves down creating a conical shape (see figures 8.9 and 8.10). It is doubled, and is placed at a height approximately the height of the grass. The flowers are not going to have a stem and are actually going to be "floating" on the grass, but they'll create the illusion that they do have a stem. Vertex paint is not used for the flowers, because as it does not have a stem, it is not necessary that a certain part does not move.

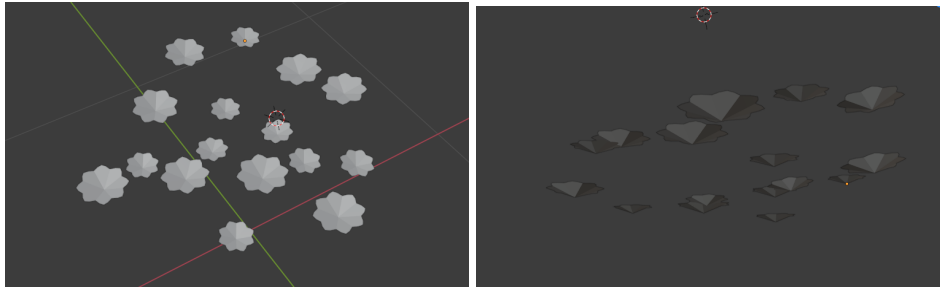


Figure 8.9: Flower model top
 Figure 8.10: Flower model bottom

For the material, the same steps as the previous one were followed, unlike the use of a texture (Hand painted in Procreate) to simulate the petals and the core of the flower, and the absence of the Vertex Color (see figures 8.11 and 8.12).

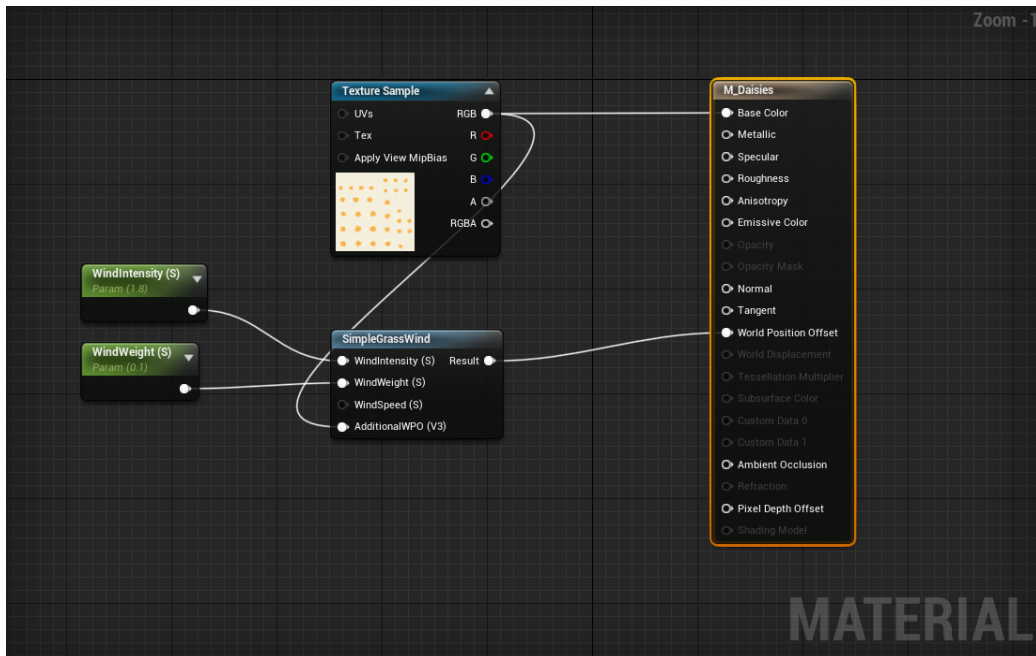


Figure 8.11: Flower material in UE4



Figure 8.12: Final result of the flowers

8.2 Modular buildings

One of the main decisions taken in terms of buildings was to create modules in order to streamline the building construction process. The advantages of doing it this way were the ease of assembling different buildings, the optimisation in terms of polygons, their reusability and the fact that the UVs of the models only need to be adjusted once (once per module).

To obtain the size ratio that all the modules had to follow, the Blender cube was used, making vertical cuts that wrapped the cube, so that both the top and bottom faces were divided into four squares, and the sides into two rectangles. Once the division was made, one of the "corners" and its adjacent polygons were selected, that is, one of the four upper squares, the two rectangles that touch the edges, and the square of the lower face. An "inset" is applied to this set of selected polygons, creating a new ring of polygons (see figure 8.13). The rest of the polygons that do not belong to the created ring are removed (see figure 8.14), and once clean, the outer faces of the ring are joined with a "fill" and the rest are removed (see figure 8.15). The result is the base module of the corner, which was the most difficult part to obtain.

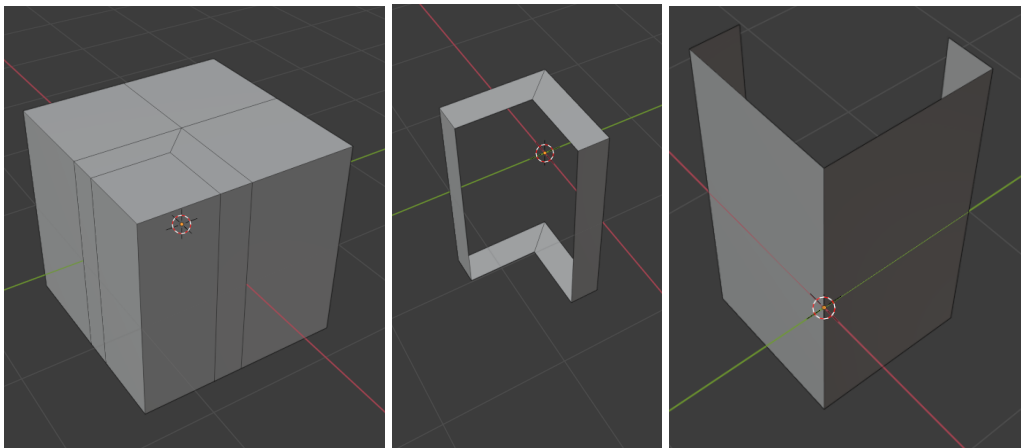


Figure 8.13: Blender cube with the cuts and inset

Figure 8.14: Polygons obtained with the inset

Figure 8.15: Final corner piece

The rest of the pieces follow a size relationship with the corner piece. In total, twenty base pieces were created for the structure, which can be easily modified to adapt to any desired shape. In addition to the structure modules, 4 types of windows and a door were created, which attach to the walls and offer variety to the structures (see figure 8.16).

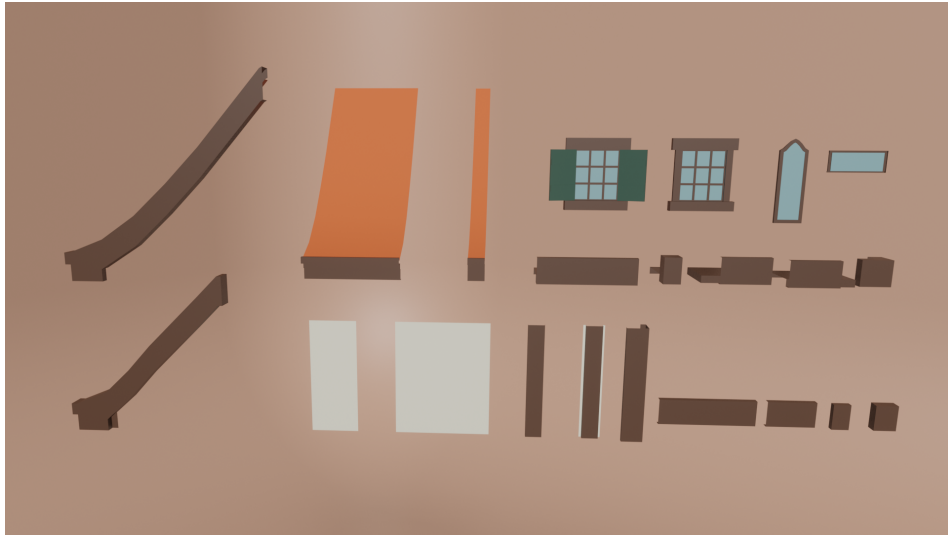


Figure 8.16: Render of some of the modules

Once the modules have been checked to ensure that they fit together, a house with a complex structure is assembled to see how they work (see figures 8.17 and 8.19). The roofs are the only modules that are modified according to the structure of the house, in order to be able to adapt well to the shape (see figure 8.18).



Figure 8.17: First house using the modules

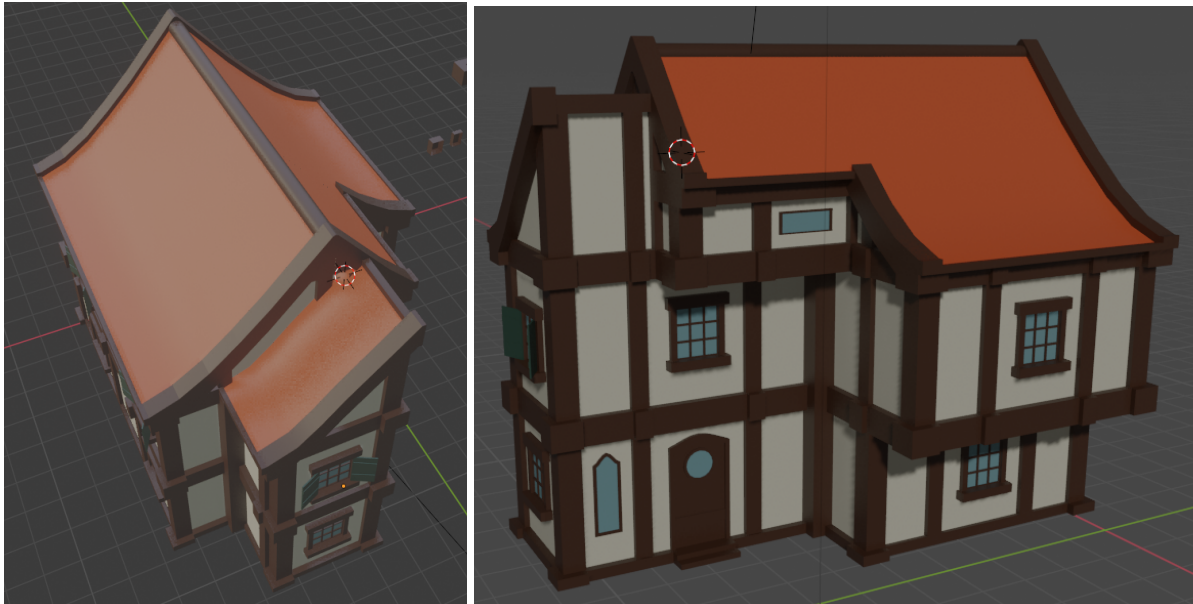


Figure 8.18: Top view of the house
Figure 8.19: Front view of the house

8.3 Assets for the town

For the assets, a small selection was made of what objects were needed to create the scene, including signs, market stalls, lampposts, benches, outdoor tables and chairs, flowerbeds and the statue.

All the assets followed a very similar creation process. A simple model was created to obtain the basic shape. Then various details were added, always taking into account the number of polygons. When the models were ready, the Shade Smooth option was activated on the model for the areas where the polygons should not be noticeable, for example, on the cylinder of the lamppost.

Once everything is correct, the model is exported in fbx and imported into the game engine if it's going to use one texture, or in Substance Painter multiple textures have to be used.

8.4 Character model

Unfortunately, an unforeseen problem with the licences and textures, which is explained in the next section, occurred and delayed the development of the project considerably. Although the base mesh of the character had already been created, in the end the decision had to be taken to discard the creation of this model due to lack of time. At this point, the face, hair and clothes still needed to be sculpted. In addition, the model had to be retopologized, painted and textured in order to be able to implement it in the game engine. All that remained to be done added up to a considerable amount of hours for a model, while the rest could be spent on the rest and a good quality scene could be created.

8.5 Texturing process

The texturing process was the most difficult of all the art for the game due to a complication in the process. Originally, during the documentation process the developer of the Substance Painter and Substance Designer software had just released a free pack of 100 free-to-use stylised materials for games and animation. These could be obtained from the software's asset store without any problem. The aim was to create some materials for very specific models, such as tiles and walls, and use the rest of the pack provided by Substance.

All this was a decision taken at the beginning of the project, so when it was time to texture the assets, a problem appeared that had not been contemplated before. Adobe had bought Substance and changed all the terms of use and payment methods. The Substance software suite became a monthly fee and all the materials that had been free to date were no longer free, and in order to access them you had to pay the monthly fee. In addition, there were several licensing problems during this period, as the licence used was a student licence. Previously, Substance provided a free licence to all students of any university by simply attaching the university registration, which was the process followed at the beginning of the project. However, this process has probably changed as it is now owned by Adobe and will follow Adobe's licensing guidelines. After a couple of days, the licence could be reactivated, but with an expiry date of half a year. Despite having access to the software, the student licence does not give access to the Asset Store, so the pack that was initially going to be used in the project was unfeasible.

After this inconvenience, and the unavailability of the necessary materials, the objective had to be changed and the materials had to be created from scratch. For this it was better to make a reduced number and only for those elements that were going to be more eye-catching, i.e. those belonging to the buildings. The materials chosen were the roof tiles, the wood of the beams and embellishments, the plaster wall and the rock wall.

This first material had to be a plaster wall that was visibly worn, with areas where the plaster had been lifted and soiled. But, at the same time, it couldn't be too realistic, it had to have a bit of a hand-painted look.

The first step was to create a rough texture, where you could see the line left by the plaster. This is achieved by using a cloud noise (Clouds 2 in Substance Designer) and a Perlin Noise texture with a scale of fifteen. These two texture nodes are joined at the Slope Blur Grayscale node, which creates a directional blur by combining the two nodes. The output creates a large blotchy texture with relief that gives the impression of plaster. The darker areas are not necessary, though, and the wear and tear effect is missing.



Figure 8.20: Perlin Noise and cloud texture with the Slope Blur Grayscale

For the weathering effect, another noise has to be added, in Substance Designer the "Grunge Map 001". Using the blend node, set the new noise as the foreground texture and the result of the Slope Blur Grayscale node as the background texture. In this way, the colour intensity of the plaster is diminished and more diffused, and in some areas a subtle wear appears. The result of this node is connected with the outputs of normal map, height and ambient occlusion, the first two to generate height in the material and prevent it from being flat, and the last one to ensure a shading in some points such as the worn areas, and contribute to the three-dimensional effect. Finally, the result of the blend node is connected to a gradient map node, to be able to adjust the colours and values. In this case, the wall should be white, with a slight warm tone. In addition, this node corrects the different colour changes in the plaster to make it more uniform. The result of the gradient map is connected to the base colour output.

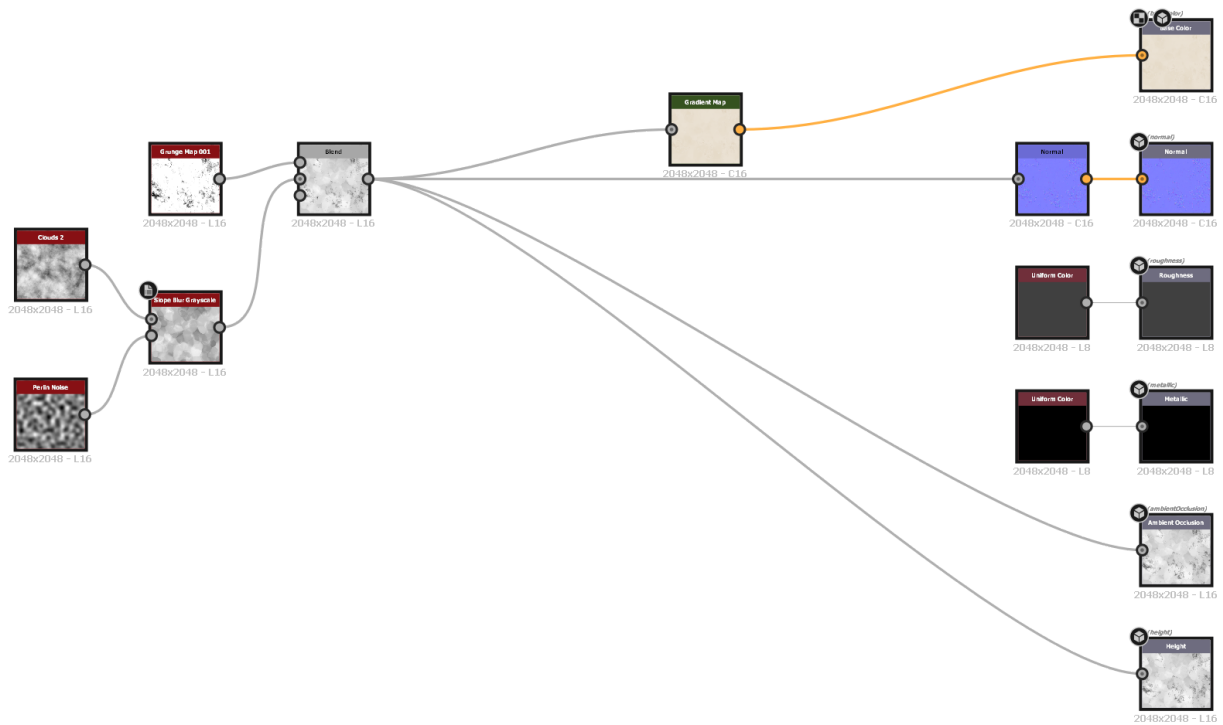


Figure 8.21: Node Graph of the plaster wall material

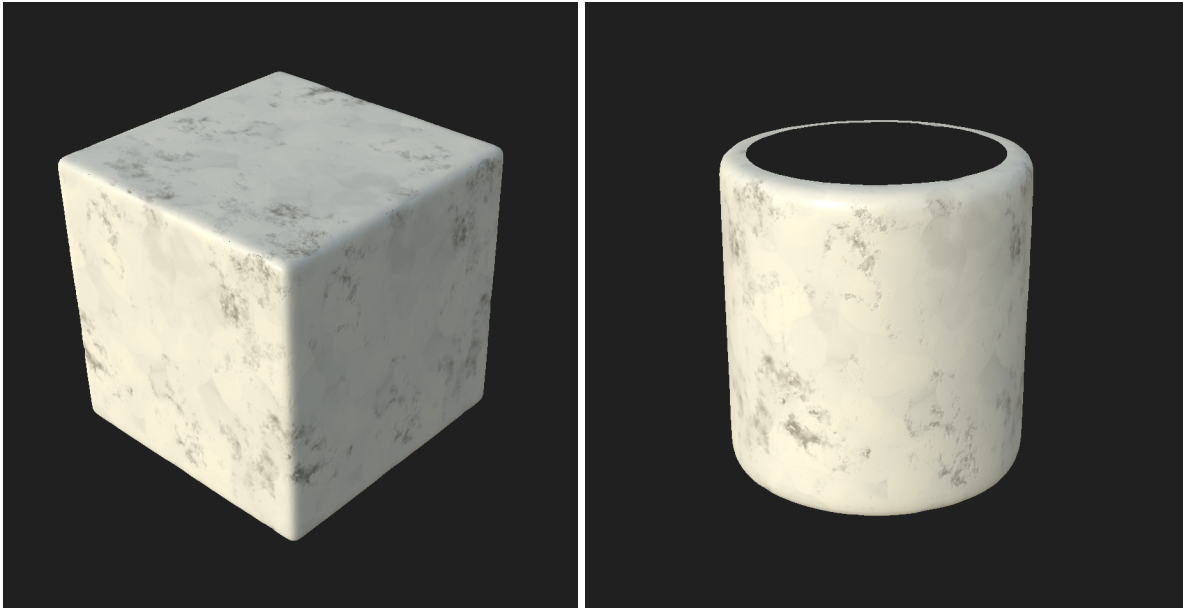


Figure 8.22: Final result of the plaster wall material (cube)
Figure 8.23: Final result of the plaster wall material (cylinder)

For the wood, the same conditions had to be met, it did not have to be realistic and the texture had to be able to stretch without deforming, as it was to be applied to very long beams.

The process of creating this material consisted of two parts. The first one was to create an irregular texture that resembled used and slightly worn wood. A noise called "Grunge Map 005" is used for this purpose.

For the second part, the wood grain had to be achieved in such a way that when combined with the weathered effect it would provide a wood grain texture. This part was a bit more complex. First we had to create a node with the "Anisotropic Noise". Then with a Histogram Scan the occurrences of the noise are reduced, so that some lines remain more dispersed. To make the lines less straight and give the impression of more curved waves, a "Wrap" node is used, which wraps the texture you are working with following the pattern of another texture, in this case the "Perlin Noise".

At this point, the grain texture is in a horizontal position, while the wood texture is in a vertical position. Using a "2D Transformation" node, the grain texture is rotated, and later combined with a "Blend" node, creating the desired texture. Finally it is connected with a "Gradient Map" to adjust the colours to an orangey brown. The greyscale texture goes directly to the height map, normal map and ambient occlusion, while the coloured texture connects to the base colour.

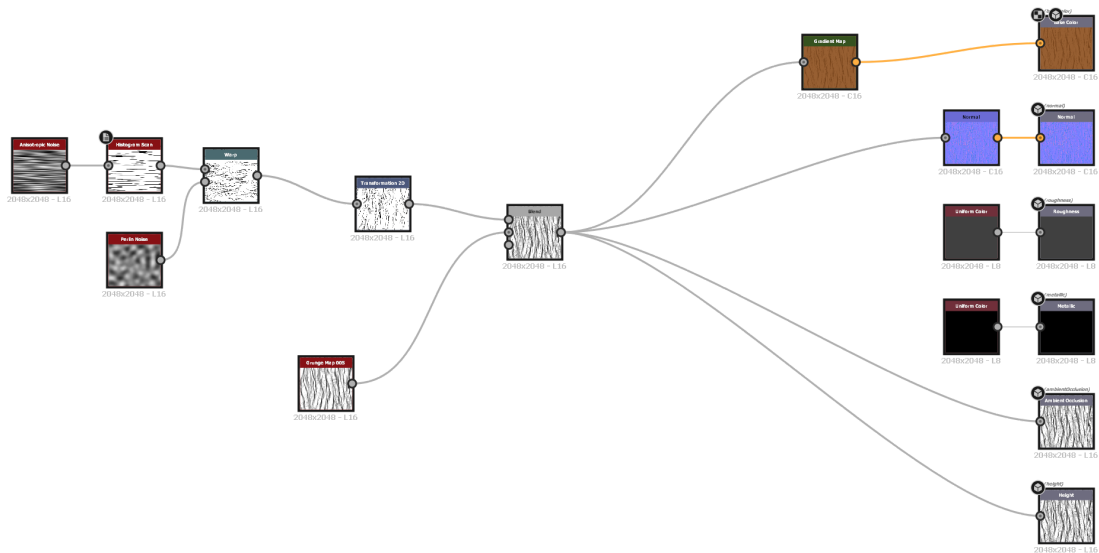


Figure 8.24: Node Graph of the wood material



Figure 8.25: Final result of the wood material (cube)
 Figure 8.26: Final result of the wood material (cylinder)

For roof tiles, the procedure varies slightly [11]. First the shapes are drawn in an SVG node. Once the different shapes have been created, they are blurred and a greyscale is added, so that there is a light part and a shadow part. From there, a tile-generating node is added and the created shapes are passed as input. To generate variety and give it a more organic look, we follow the same method as with the plaster wall, using Perlin's noise and a Slope Blur Gradient node. At this point the texture of the tiles is already achieved, and we only need to add some nodes to create detail and adjust the colour. The other materials follow a very similar process as described above.

The rest of the assets were textured using Substance Painter and the materials available in the program itself. This process was not initially planned, since as explained before, a material pack provided by Substance was going to be used.



Demo

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This chapter explains the process of creating the demo, as well as the different elements of the setting in order to show all the artwork created.

9.1 Setting up the project

The idea of this demo was to show and place all the game art together and using the game engine resources as particles systems creator, foliage, and landscape tools, create a little scenario to showcase the art and fulfill the initial objective of this project: translate all the work done on paper to a game environment that's coherent with the world designed.

On the other hand, implementing all the mechanics and systems developed in the game design document was never the idea and the objective of this demo and this project.

For the demo, one of the pre-existing Unreal Engine 4 projects was used, the third person project (see figure 9.1). This project comes with an animated humanoid and with the movement and camera already created. It has the mechanics of walking and jumping, and the camera is moved with the mouse.

The movement blueprint was later adjusted to modify the jumping as it was a bit artificial, and to add the option to sprint with the Shift key.

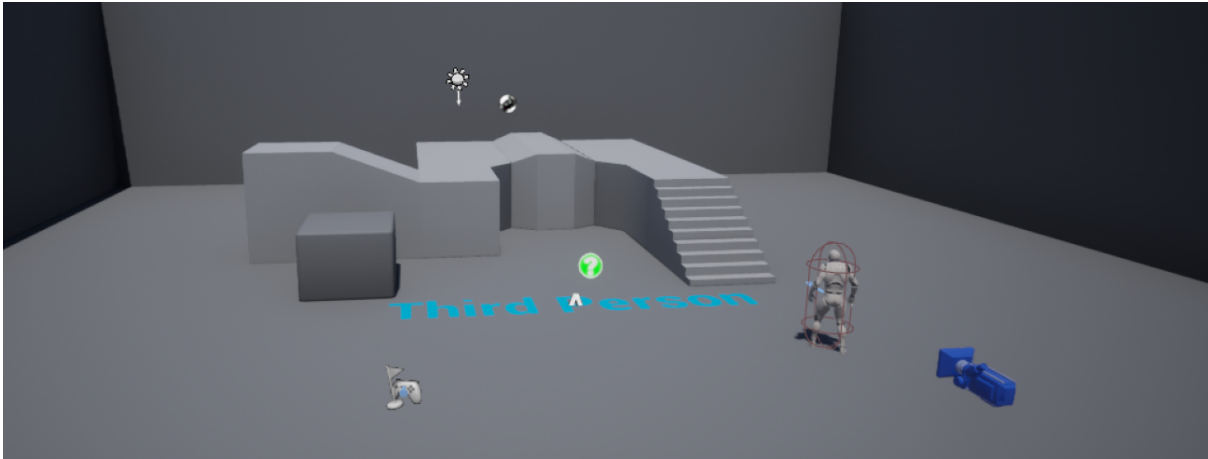


Figure 9.1: Base third person project from Unreal Engine 4

From the base project, the assets and options not needed for the demo were removed, and then a terrain was added and shortly afterwards modified with the terrain tool so that it was not a plane. Using Unreal's foliage tool, and the aforementioned vegetation, the area to be used for the demo was created with vegetation, relief and various trees. With this, the project was ready to implement the rest of the steps.

9.2 VFX and particle systems

For the stylized wind lines seen on stage [8], the idea was to create a particle system that would give the environment a more “lively” appearance. For this representation of the wind, a material containing the colour of the particles and a "Radial Gradient Exponential" node was created. This last node makes the material translucent and blurs the edges giving the appearance that it is fading. The particle system tool was then used, creating two particle emitters, one for the direction and another for the line. This one uses a ribbon, so it follows the first one. When the particle system is setted, a sphere was created to randomise a little the creation of the wind lines (see figure 9.2).



Figure 9.2: Final result of the stylized wind

Moreover, a particle system was created to simulate leaves falling from trees [9]. This system works in a similar way to the wind system, but does not use the ribbon, as the leaf does not need to leave a trail. For the material that uses the particle system, it was necessary to draw a leaf shape in Procreate and then implement it as the leaves used by the system. The emitters will be placed under the trees so that they appear to fall from them.

9.3 Landscape

The town that was to be shown in the demo was Guardian's Lair, an urban centre set around a statue and located at different heights around the statue.

To get a general idea of what the setting and dimensions would be like, a blockout was done first. This technique comes from Vincent Barbe's article [4] and consists of using basic shapes such as cylinders and cubes to generate the shapes of what would be the environment. For the village we had to use a cylinder and place it in the centre, slightly rotated, and around it cubes of different heights joined with stairs (see figure 9.3). In addition, vegetation and the plaster wall material were also added in order to see the contrasts better (see figure 9.4).



Figure 9.3: Guardian's Lair main blockout



Figure 9.4: In game view of the scene.

9.4 Scene montage

Once the general idea of the scene was clear, the next step was to start placing the created assets and set up the village with the buildings, as well as adding textures to the terrain and placing the vegetation well (see figures 9.5 and 9.6).

This step took quite a long time, as the scene had to be modified several times until the desired result was achieved.



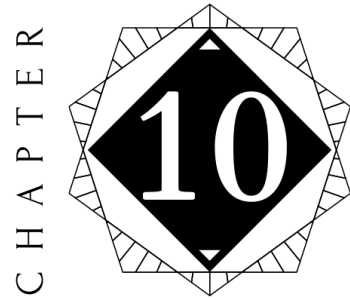
Figure 9.5: In game final flowers and grass implementation



Figure 9.6: In game building overview

9.5 Post processing

For post-processing, a fog with different colour ranges was added to give the scene a more atmospheric look. For this post-processing material we use the input node in the Unreal Engine 4 material tool and several colour nodes with the desired shades in the fog. They are modified by means of the Append node so that they have the remaining transparency of the colour and by means of a Lerp node they are joined to the general texture using a parameter to determine the transparency. When all the colours have been joined, the result of the last node is only joined to the emissive colour output. This results in a subtle mist that changes between shades, which completes the fantasy world effect.



Conclusion and future work

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10.1 Conclusions

During the degree we have taken a series of subjects, which aroused my interest in trying to go deeper into that part of game development, such as Hypermedia narrative and video game analysis (VJ1218) and Video Game Art (VJ1223).

When facing this project I was pretty sure that it was going to be difficult to achieve something worthy of my expectations, and at many moments I doubted that the result was going to be good. I started having to learn how to use three different softwares to develop the project, and without the necessary skills in the area of texturing and game design. It was too ambitious a project for the level of knowledge I had at the time. I'm glad after reaching the end of the project to see that the result is much better than I expected, and not only that, but the fact that I have improved my skills, both as a concept artist and as a 3D artist, as well as having learned a lot about world creation, storytelling and game design. Another very positive aspect of this project is having learned how to use Unreal Engine 4, one of the main game engines in the industry, and the one used in several of my favourite videogames. I am sure that all these skills developed throughout this project have made me a better professional.

Overall, I am very satisfied with the results obtained, and I really enjoyed the development of this project. I think it has been a challenge to overcome, and a good way to expand the knowledge obtained in the career in different areas.

10.2 Future work

The world I have developed for this project, Seirei, is something I don't want to be left out and forgotten in any way, just like the story. I'd like to keep working on it, and in time I'll be able to add mechanics, enemies and NPCs to the demo, and even improve the assets. I've really enjoyed the development of the project and I'd like to continue with it, as a personal project and to keep improving my skills.

Also, another thing I would like to implement are cut scenes, since they would be a great personal challenge in terms of animation, composition and storytelling.



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